

**NUCLEAR REGULATORY COMMISSION**  
**Notice of Availability of Model Application Concerning**  
**Technical Specification Improvement To Modify Requirements Regarding**  
**Mode Change Limitations Using the Consolidated Line Item Improvement Process**

**AGENCY:** Nuclear Regulatory Commission

**ACTION:** Notice of Availability

**SUMMARY:** Notice is hereby given that the staff of the Nuclear Regulatory Commission (NRC) has prepared a model application relating to the modification of requirements regarding technical specifications (TS) mode change limitations. The purpose of this model is to permit the NRC to efficiently process amendments that propose to modify requirements for TS mode change limitations as generically approved by this notice. Licensees of nuclear power reactors to which the model applies could request amendments utilizing the model application.

**DATES:** The NRC staff issued a Federal Register Notice (67FR 50475, August 2, 2002) which provided a model safety evaluation relating to modification of requirements regarding TS mode change limitations<sup>1</sup>; similarly, the NRC staff, herein provides a Model Application, including a revised model safety evaluation. The NRC staff can most efficiently consider applications based upon the Model Application, which reference the model safety evaluation, if the application is submitted within a year of this Federal Register Notice.

**FOR FURTHER INFORMATION CONTACT:** Robert Dennig, Mail Stop: O-12H4, Division of Regulatory Improvement Programs, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, telephone 301-415-1161.

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<sup>1</sup>[In conjunction with the proposed change, technical specifications (TS) requirements for a bases control program, consistent with the TS Bases Control Program described in Section 5.5 of the applicable vendor's standard TS (STS), shall be incorporated into the licensee's TS, if not already in the TS. Similarly, the STS requirements of SR 3.0.1 and associated bases shall be adopted by units that do not already contain them.]

**SUPPLEMENTARY INFORMATION:**

**Background**

Regulatory Issue Summary 2000-06, "Consolidated Line Item Improvement Process for Adopting Standard Technical Specification Changes for Power Reactors," was issued on March 20, 2000. The consolidated line item improvement process (CLIIP) is intended to improve the efficiency of NRC licensing processes. This is accomplished by processing proposed changes to the standard technical specifications (STS) in a manner that supports subsequent license amendment applications. The CLIIP includes an opportunity for the public to comment on proposed changes to the STS following a preliminary assessment by the NRC staff and finding that the change will likely be offered for adoption by licensees. The CLIIP directs the NRC staff to evaluate any comments received for a proposed change to the STS and to either reconsider the change or to proceed with announcing the availability of the change for proposed adoption by licensees. Those licensees opting to apply for the subject change to technical specifications are responsible for reviewing the staff's evaluation, referencing the applicable technical justifications, and providing any necessary plant-specific information. The included model safety evaluation provides the justification for the changes, stands alone, and is not an endorsement of the TSTF-359, Revision 8, Change Description and Justification. Each amendment application made in response to the notice of availability will be processed and noticed in accordance with applicable NRC rules and procedures.

This notice involves the modification of requirements regarding mode change limitations in technical specifications. The change referenced in the Federal Register Notice (FRN) 67FR50475, of August 2, 2002, is TSTF-359, Revision 7. TSTF-359, Revision 8, incorporates most, but not all responses to the public comments. Two additional changes to TSTF-359,

Revision 8, are required and discussed in this notice. TSTF-359, Revision 7; TSTF-359, Revision 8; and TSTF-359, Revision 8, as modified; can all be viewed on the NRC's web page at <http://www.nrc.gov/reactors/operating/licensing/techspecs/changes-issued-for-adoption.html>.

### **Applicability**

This proposed change to modify technical specification requirements for TS mode change limitations is applicable to all licensees who currently have or who will adopt, in conjunction with the proposed change, technical specification requirements for a bases control program consistent with the Technical Specifications (TS) Bases Control Program described in Section 5.5 of the applicable vendor's STS, and STS Surveillance Requirement (SR) 3.0.1 and associated bases.

To efficiently process the incoming license amendment applications, the staff requests each licensee applying for the changes addressed by TSTF-359, Revision 8, as modified, using the CLIIP to include bases for the proposed technical specification consistent with the bases proposed in the TSTF-359, Revision 8, as modified by staff responses to public comments 8 and 20 below. In addition, for those licensees that have not adopted requirements for a bases control program or STS SR 3.0.1 by converting to the improved STS or by other means, the staff requests that they include the requirements for a bases control program and STS SR 3.0.1 and associated bases consistent with the STS, in your request for the proposed change. The need for a bases control program stems from the need for adequate regulatory control of some key elements of the proposal that are contained in the proposed bases for Limiting Condition for Operation (LCO) 3.0.4, SR 3.0.4, and SR 3.0.1. The staff is requesting that the bases be included with the proposed license amendments because, in this case, the changes to the technical specifications and changes to the associated bases form an integrated change to a plant's licensing basis. To ensure that the overall change, including the bases, includes the

appropriate regulatory controls, the staff plans to condition the issuance of each license amendment on incorporation of the changes to the bases document and on ensuring the licensee's TS have a bases control program for controlling changes to the bases. The CLIIP does not prevent licensees from requesting an alternative approach or proposing the changes without the requested bases and bases control program. Variations from the approach recommended in this notice may, however, require additional justification, additional review by the NRC staff and may increase the time and resources needed for the review.

### **Public Notices**

The staff issued a Federal Register Notice (67 FR 50475, August 2, 2002) that requested public comment on the NRC's pending action to approve modification of technical specification (TS) requirements regarding mode change limitations. In particular, following an assessment and draft safety evaluation by the NRC staff, the staff sought public comment on proposed changes to the standard technical specifications (STS), designated as TSTF-359, Revision 7. TSTF-359, Revision 8, incorporates most, but not all responses to the public comments. Two additional changes to TSTF-359, Revision 8, are required and discussed in this notice. TSTF-359, Revision 7; TSTF-359, Revision 8; and TSTF-359, Revision 8, as modified; can all be viewed on the NRC's web page at, <http://www.nrc.gov/reactors/operating/licensing/techspecs/changes-issued-for-adoption.html>. The TSTF-359, Revision 7, change request, the TSTF-359, Revision 8, change request, the TSTF-359, Revision 8, change request as modified by this notice, as well as the NRC staff's safety evaluation may be examined, and/or copied for a fee, at the NRC's Public Document Room, located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available records are accessible electronically from the Agencywide Documents Access

and Management System (ADAMS) Public Library component on the NRC Web site, (the Electronic Reading Room).

In response to the notice soliciting comments from interested members of the public about modifying the TS requirements regarding mode change limitations, the staff received eight sets of comments (three from individual licensees, one from an industry contractor, and four from members of the public). Specific comments on the model SE are discussed below:

**1. Comment:** The last sentence of the first paragraph of Section 3.0, "Technical Evaluation" states, "Good practice should dictate that such transitions should normally be initiated only when all required equipment is operable and that mode transition with inoperable equipment should be the exception rather than the rule." If the required risk evaluation determines that it is acceptable to enter a Mode with certain required equipment inoperable, then this restriction is unnecessary. There may be some situations that recur routinely where the plant would benefit by changing modes with certain equipment inoperable. If the risk evaluation has determined that this change in modes is acceptable, then it should not matter if it is done routinely or as an "exception rather than the rule."

**Staff Response:** The statement reiterates a longstanding staff position. On June 4, 1987, Generic Letter 87-09 provided the first step in mode change flexibility, allowing mode changes where action requirements permitted continued operation for an indefinite period (the starting point for the current increase in flexibility). As part of the discussion, that letter stated:

"For an LCO that has Action Requirements permitting continued operation for an unlimited period of time, entry into an operational mode or other specified condition of operation should be permitted in accordance with those action requirements ....

However, nothing in this staff position should be interpreted as endorsing or

encouraging a plant startup with inoperable equipment. The staff believes that good practice should dictate that plant startup should normally be initiated only when all required equipment is operable and that startup with inoperable equipment must be the exception rather than the rule.”

Any risk, whether large or small, should be incurred only when necessary. With appropriate planning, it should not be necessary to “routinely” start up with inoperable equipment.

**2. Comment:** Section 2.0, first paragraph, second to last sentence: change “provide” to “provides.”

**Staff Response:** The staff agrees.

**3. Comment:** Section 3.0, second paragraph, third sentence: change “plants” to “plant’s.”

**Staff Response:** The staff agrees.

**4. Comment:** Section 3.0, second paragraph, fourth sentence: change “allowances” to “allowance.”

**Staff Response:** The staff agrees.

**5. Comment:** Section 3.1.1, fifth paragraph, third sentence: change “the systems/components not to be granted the LCO 3.0.4 or SR 3.0.4 allowances for the various modes listed” to “the systems/components not to be granted the LCO 3.0.4 or SR 3.0.4 allowances for the various modes **are** listed.”

**Staff Response:** The staff agrees.

**6. Comment:** Section 3.1.2, first paragraph, second sentence: change "delta DCDF" to "delta CDF."

**Staff Response:** The staff agrees.

**7. Comment:** Section 2.1 Proposed Change to LCO 3.0.4 and SR 3.0.4 where it talks about SR 3.0.4 wording changes (about halfway through 5th paragraph on page 50478): The revised new wording, "The revised SR 3.0.4 will conform to the changes to LCO 3.0.4 and read: "Entry into a MODE or other specified condition in the Applicability of an LCO shall not be made unless the LCO's Surveillances have been met within their specified frequency." is incompatible with TSTF 359 regarding the new SR 3.0.3 on missed surveillances that the NRC recently approved.

New SR 3.0.4 requires Surveillances to be met within their specified Frequency prior to entry into a MODE or other specified condition in the Applicability. If SR 3.0.3 is applied to a missed Surveillance and a risk evaluation supports a delay beyond 24 hours, new SR 3.0.4 would only allow this delay to be applied in the MODE or other specified condition in the Applicability in which the plant is operating at the time of discovery that the Surveillance has been missed. While this provision does not prevent a shutdown, it would prevent entry into a higher MODE of operation with a Surveillance that had not been performed within its specified Frequency.

To address this situation, SR 3.0.4 needs to be modified to state that SR 3.0.4 prohibits entry into a MODE or other specified condition in the Applicability of an LCO unless the associated Surveillances have been met within their specified Frequency, except as provided by SR 3.0.3. The bases for SR 3.0.4 need to be modified also to provide the flexibility for entry into higher MODES with a missed Surveillance since the equipment is still OPERABLE and the risk evaluation is still valid for this situation.

SR 3.0.3 evaluation considers missed surveillance equipment to be still OPERABLE, and new SR 3.0.4 would allow going up in MODES except that it specifically says no mode entry "unless the LCO's Surveillances have been met within their specified frequency." and doesn't talk about OPERABLE equipment.

To fix this, reword new SR 3.0.3 to say, "Entry into a MODE or other specified condition in the Applicability of an LCO shall not be made unless the LCO's Surveillances have been met within their specified frequency, except as provided by SR 3.0.3." (And add the bases wording indicated above.)

Rev. 7 of TSTF 359 had addressed this issue but it does not appear to be addressed by the NRC in the FR notice.

**Staff Response:** The staff agrees. SR 3.0.4 will be modified to include the phrase, "... except as provided by SR 3.0.3." The bases wording will be modified accordingly.

In reviewing LCO 3.0.4 and SR 3.0.4, the redundancy in stating the criteria (items a, b and c) for allowing entry into a Mode or other specified condition in the Applicability is unnecessary. The listing of the criteria (items a, b and c) are more appropriately stated in LCO 3.0.4, since it controls the Mode transition; the LCO is not met due to a SR not being met. Therefore, to eliminate the redundancy and make the statements more accurate, SR 3.0.4 is changed to read, in its' entirety:

"Entry into a MODE or other specified condition in the Applicability of an LCO shall only be made when the LCO's Surveillances have been met within their specified frequency, except as provided by SR 3.0.3. When an LCO is not met due to Surveillances not having been met, entry into a MODE or other specified condition in the Applicability shall only be made in accordance with LCO 3.0.4.

This provision shall not prevent entry into MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.”

Related consistency changes are made throughout the SE.

**8. Comment:** If the NRC requires a Revision 8 be prepared before the Notice of Availability is published, then the Notice of Availability should use that revision (#8) as the basis for licensee applications.

**Staff Response:** The staff agrees; the staff will reference the latest approved TSTF-359 revision; TSTF-359, Revision 8, as modified by the response to Comment 20 below and the following modification to the TSTF-359 Revision 8 LCO 3.0.4 bases Insert. The 11<sup>th</sup> paragraph shall be re-written to read:

“Upon entry into a MODE or other specified condition in the Applicability with the LCO not met, LCO 3.0.1 and LCO 3.0.2 require entry into the applicable Conditions and Required Actions for no more than the duration of the applicable ACTIONS Completion Time or until the LCO is met or the unit is not within the Applicability of the TS.”

**9. Comment:** For Boiling Water Reactors (BWRs) with Mark 1 containments, the Table lists the Hardened Wetwell Vent as such a SSC that should be excluded. However, the Hardened Wetwell Vent is not a SSC included within Technical Specifications (TS). Thus, the proposed TSTF implies that TS Actions should be applied to a non-TS SSC. This is inappropriate and not necessary to properly manage overall risk. The existing plant programs that implement paragraph (a)(4) of the Maintenance Rule (10CFR50.65) are the appropriate mechanism for

this specific SSC. Consequently, we request that TSTF-359 be clarified to not include the Hardened Wetwell Vent.

**Staff Response:** The tables included in TSTF-359 and the draft safety evaluation were provided by the BWR Owners Group as a result of generic analysis, which the staff has reviewed and accepted. The analysis and tables are comprehensive and do cover systems that are not in TS. The staff does not believe that the presence in the analysis and tables implies that TS actions are required for those systems such as the Hardened Wetwell Vent system.

**10. Comment:** Second, this table and the accompanying mark-up of the actual TS pages for BWRs included in TSTF-359, Revision 7, state that the Limiting Conditions for Operation (LCO) 3.0.4.b exclusion note should be added to the TS LCO 3.4.9, Residual Heat Removal (RHR) Shutdown Cooling System-Cold Shutdown, such that a MODE change from MODE 5 to MODE 4 would be precluded with LCO 3.4.9 not met. However, LCO 3.0.4 only applies to MODE changes in MODES 1, 2, or 3. Thus, the proposed change to LCO 3.4.9 is inconsistent with the existing wording of the LCO 3.0.4 applicability. Therefore, we believe that the LCO 3.0.4 Note to LCO 3.4.9 should not be included in the proposed changes.

**Staff Response:** The notes limiting the applicability (to Modes 1, 2, 3, and 4 for PWRs, and to Modes 1, 2, and 3 for BWRs) of the current STS LCO 3.0.4 and STS SR 3.0.4 are holdovers from the existing Standard Technical Specifications (STS). The notes limiting the applicability of LCO 3.0.4 and SR 3.0.4 are no longer needed and are removed by TSTF-359, Revision 8. The industry owners groups' analyses would subsequently support adding notes to various TS, as defined by the tables of higher risk systems in the FRN, precluding entry into Modes 5 and 6 for PWRs, and Modes 4 and 5 for BWRs. However, the addition of notes in these cases is made unnecessary by action statements that require immediate completion times, which means

that entry into the Mode or other specified condition in the Applicability is not allowed and the notes would be superfluous.

**11. Comment:** Two editorial corrections to TSTF-359, Revision 7, are needed. First, in INSERT 6 (SR 3.0.4 BASES) the word "that" in the second line, after the word "Surveillance," should be deleted. Second, the second sentence to INSERT 8 (RCS SPECIFIC ACTIVITY BASES) should be deleted, since it is redundant to the existing Bases and therefore need not be included.

**Staff Response:** The staff agrees.

**12. Comment:** Reliance on a licensee's 50.65 (a)(4) "program" appears to be a flawed basis. While this proposed change to the TS as well as the previous one for surveillance interval and completion time extensions (66 FR 49714) rely on the "program", that program is not required by 50.65 (a)(4) to be a written program, it's not required by the regulation to meet the risk management objectives of RG 1.177 or any other standard, nor does it require a licensee to find any particular level of risk to be unacceptable. It, in fact, only requires that the risk be assessed (without specifying a method, a degree of rigor or even that the assessment be documented) and managed (with no definition what that means). While Page 23 of the document states "Risk assessments will be conducted using the procedures and guidance endorsed by Regulatory Guide 1.182, "Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants.", licensee adherence to this standard or the NUMARC guidance it endorses is neither required in the regulation nor are any licensees committed to those documents through their license or FSAR. The fact that licensees will be inspected in this area using IP 71111.13 and Supplemental IP 62709 is of little value if those inspections are not

being done against specific standards that the licensees are required to meet rather than the general standard of (a)(4) which has the limitations discussed above.

**Staff Response:** A licensee adopting this change will be required to commit in the bases to the Technical Specifications to follow Regulatory Guide 1.182. In addition, the licensee will be required to adopt a bases control program identical to that contained in the Standard Technical Specifications. Regulatory Guide 1.182, "Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants," endorses NUMARC 93-01 Section 11, "Assessment of Risk Resulting from Performance of Maintenance Activities," which provides risk assessment and management "methods that are acceptable to the NRC staff for complying with the provision of 10 CFR 50.65 (a)(4)." NUMARC 93-01 Section 11 requires that this assessment process be proceduralized. Furthermore, Inspection Procedure 71111.13 provides inspection guidance on, among other things, the verification of the performance of maintenance risk assessments, the adequacy of risk assessments and the management of the resulting risk.

**13. Comment:** It is noted that the Standard TS Bases for the revised TS 3.0.4 has not been provided for comment. Are the standards above such as Reg Guide 1.182 being included in the TS Bases and therefore subject to the bases control program? If not, why not?

**Staff Response:** The proposed STS bases are included in TSTF-359 and were open for comment. The portion of the question related to the TS Bases and bases control program was answered in the response to comment 12 above.

**14. Comment:** Notwithstanding statements like "Good practice should dictate that such transitions should normally be initiated only when all required equipment is operable and that mode transition with inoperable equipment should be the exception rather than the rule" and "..."

the expected low frequency of the proposed mode changes with inoperable equipment..", isn't it just as likely (and perfectly acceptable under this proposed change) that once the licensee has justified a mode change with a certain piece of equipment inoperable during a particular startup, that during subsequent startups the licensee could actually plan into the startup the return of that equipment after the Mode change it was required for, by using that previous assessment? What would prevent the licensee from doing that (assuming other system alignments are equivalent)? Taking it a step further, what will prevent the licensee from, over time, developing a whole combination of assessments that justify not having multiple pieces of equipment operable during a particular mode change and routinely using those assessments in subsequent startups? Similarly, wouldn't the proposed TS allow multiple mode changes in the same startup with same piece(s) of inoperable equipment as long as the assessment covers each mode? Is that what was intended?

**Staff Response:** See the response to comment 1 above. It is acceptable for licensees to utilize pre-existing risk assessments, as long as they adequately address the existing plant conditions. The applicability of TS frequently covers multiple modes, and therefore mode changes within the applicability of the TS would be allowed, as long as the risk assessment is re-evaluated prior to each mode change.

**15. Comment:** [Page 21][The SE] states "For systems and components which are not higher risk, any temporary risk increase associated with the proposed allowance will be smaller than what is considered acceptable when the same systems and components are inoperable at power. This is due to the fact that the CTs associated with the majority of TS systems and components were developed for power operation and pose smaller plant risk for action statement entries initiated or occurring at lower modes operation as compared to power

operations." The first sentence above is only restricted by whether something is higher or lower risk but the justifying statement only applies to the majority of TS systems which are associated with power operations. What is the minority of TS systems for which plant risk is higher in lower modes of operation? Are all those systems on the list of higher risk systems? If all those systems are not included on the list of high risk systems how is the first quoted sentence true?! How do the lists of high and low risk systems at power and in lower modes discussed in this proposal compare with the results of the shutdown risk analysis the NRC now has underway? If there are differences what is the justification?

**Staff Response:** The "minority of TS systems for which plant risk is higher in lower modes of operation," are those systems identified in the analyses and listed in the SE. These systems are determined by a qualitative analysis that compares risk in the shutdown mode with that at power. The qualitative analysis also takes into account potential risk increases (e.g., due to realignments and human errors) when entering a new mode or configuration. Those systems that have a potential to be more important to risk in the lower modes, are conservatively selected and mode changes are precluded when there is an inoperability associated with any of these potentially higher risk systems. The lists of "higher risk" systems, being based on both deterministic and probabilistic arguments with conservative assumptions, are not expected to conflict with the results of any shutdown risk analysis.

**16. Comment:** Appendix A Examples - In a number of the examples it says "if there is reasonable assurance" that the inoperable component will be restored within the CT, a risk assessment has been done, and the requisite risk management actions have been taken. Where does this need for "reasonable assurance" come from and how does the LCO require it? If a component is inoperable, what in the new LCO prevents the licensee from assuming the full

CT in the risk assessment, managing the risk for that full time and simply hoping (whether that is reasonable or not) that they will get the component back before the end of the CT?

**Staff Response:** Unplanned reactor scrams and unplanned power changes are two of the Reactor Safety Performance Indicators that the ROP utilizes to assess licensee performance and inform the public. Thus, the ROP provides a disincentive to entering a mode or other specified condition in the applicability of an LCO and moving up into power operation (Mode 1), when there is a significant likelihood that the mode would have to be subsequently exited due to failure to restore the unavailable equipment within the completion time. Additional disincentives are the 10 CFR 50.72(b)(2)(i) and 10 CFR 50.73(a)(2)(i)(A) reporting requirements. NUREG-1022, "Event Reporting Guidelines 10 CFR 50.72 and 50.73," makes it clear that a report is required when a nuclear plant shutdown required by Technical Specifications is initiated or completed.

**17. Comment:** Carrying the logic above a step further - What in the LCO (not in some voluntary cumulative risk monitoring) will prevent a licensee from changing Mode without a piece of equipment after doing the assessment and management of risk, reaching the CT, returning to a nonapplicable mode doing another assessment for the same piece of equipment that is still inoperable, changing Mode again with the proper management of the risk and simply hoping that the equipment is operable before the CT expires yet again?

**Staff Response:** While feasible from a legalistic perspective, such actions by a licensee would be indication of a poorly run plant and should result in close scrutiny by plant management and the NRC. Such licensee actions would constitute clear evidence of poor performance that would be reviewed by the performance based ROP, and management corrective oversight should result. Also, see the related response to comment 16 above.

**18. Comment:** Are the provisions of SR 3.0.2 applicable if a licensee changes mode without first doing a required surveillance? If the provisions are to be applicable, there appears to be a problem in the language of SR 3.0.2. For example, if the surveillance has a 7-day frequency but has not been performed for some months, the wording of SR 3.0.2 would require that the surveillance be performed within 1.25 times "as measured from the previous performance or as measured from the time a specified condition of Frequency is met." Given that the surveillance had last been performed months before application of 1.25 from the previous performance would appear problematic. The language of SR 3.0.2 appears to assume (based on the present requirements of SR 3.0.4 that the surveillance be successfully performed within the required frequency before the mode change) that there will be a previous "in-frequency" performance of the surveillance from which the 1.25 can be measured. Assuming that the 1.25 interval is supposed to be available, it should start from the time of entry into the applicable Mode, however that does not appear to be "a specified condition of Frequency" as now defined in TS usage examples or bases.

**Staff Response:** SR 3.0.2 (25% extension) does not apply; the SR must be met within the required action completion time, except as provided by SR 3.0.3.

**19. Comment:** Is the "which ever is greater" provision of SR 3.0.3 meant to apply to cases where a licensee changes modes without performing a surveillance? While the word "discover" would appear to argue against such a use, the first sentence of the Bases for SR 3.0.3 make it less clear "...when a surveillance has not been met..." ?

**Staff Response:** See the response to Comment 7 above. The applicable portion of SR 3.0.4 will be reworded to say, "Entry into a MODE or other specified condition in the Applicability of

an LCO shall only be made when the LCO's Surveillances have been met within their specified frequency, except as provided by SR 3.0.3."

**20. Comment:** Section 3.1.3 states "It should be noted that, the risk assessment, for the purposes of LCO 3.0.4 (b) and SR 3.0.4 (b), must take into account all inoperable TS equipment regardless of whether the equipment is included in the licensee's normal 10 CFR 50.65(a)(4) risk assessment scope." How is the NRC going to require this "must" provision if it is not incorporated into the requirements of 10 CFR 50.65 (a)(4), the TS themselves, the license or the plant FSAR?

**Staff Response:** If TS equipment is not covered by the 10 CFR 50.65 (a)(4) program, in order to transition up in mode with that TS equipment inoperable, the licensee would have to incorporate it into the program. The following sentence is to be added to the one-sentence fourth paragraph of the LCO 3.0.4 bases insert that begins, "The risk assessment may use quantitative, qualitative, or blended approaches ...":

"The risk assessment, for the purposes of LCO 3.0.4 (b), must take into account all inoperable TS equipment regardless of whether the equipment is included in the licensee's normal 10 CFR 50.65(a)(4) risk assessment scope."

**21. Comment:** Similarly Section 3.1.3 goes on to state "The requirements associated with the proposed change are established to ensure that such conditions will not occur." What is the legal basis for calling voluntary conformance with the guidelines of RG 1.174, 1.177 and 1.182, a set of requirements? Will findings under the ROP that find deviations from implementation of these standards constitute legal violations?

**Staff Response:** Paragraph (a)(4) of 10 CFR 50.65, by itself, does not prohibit putting a plant in high-risk configurations due to maintenance activities. It only requires that maintenance-related risk be assessed and managed. The industry guidance for implementation of (a)(4), the revised Section 11 of NUMARC 93-01, as endorsed by NRC Regulatory Guide 1.182, is more restrictive. Section 11 states that configurations for which the incremental core damage probability (ICDP) is greater than 10EXP-5 should not be entered voluntarily. While the regulatory guidance is not a regulatory requirement with respect to compliance with 10 CFR 50.65(a)(4), the requirements associated with the proposed change to TS 3.0.4 are a different matter.

Unlike (a)(4), the revised TS 3.0.4 is intended to ensure that high-risk configurations are not allowed; although like (a)(4), the TS is also intended to ensure that any risk that is allowed is adequately managed. Therefore, mode changes with a potentially "higher-risk system" inoperable (see definition of "higher risk system" in the SE) are prohibited by the TS; and in addition to this restriction, the revised TS 3.0.4 will also require licensees to comply in all other respects with their programs established to implement 10 CFR 50.65(a)(4). Note that the Commission has determined that such a program is a satisfactory replacement for a configuration risk management program (CRMP). With regard to the basis for treatment of RG 1.182 provisions, it is noted that: (1) the regulatory guide is one way to meet the TS requirements; (2) the licensee would commit to follow RG 1.182 in the TS Bases (see also the staff's response to Comment No. 12); and, (3) if the licensee did not follow RG 1.182, the ROP would inspect the licensee's process for acceptability.

With regard to ROP inspection findings in support of the requirements in the proposed change to TS 3.0.4, the associated TS Bases will reference the provisions of certain regulatory guides and the industry guidance that they endorse. This will, in effect, make a licensee's compliance

with the provisions of certain otherwise voluntary industry guidance documents be governed by the TS Bases Control Program. It is envisioned that the significance of this potential TS violation, to the extent that the violation involves inadequate risk assessment and/or inadequate risk management, will be determined in a manner similar to that in which the significance of (a)(4) violations is determined. When issued, the specialized significance determination process (SDP) designed for (a)(4) violations would be used under such circumstances.

Dated at Rockville, Maryland, this 28<sup>th</sup> day of March 2003.

FOR THE NUCLEAR REGULATORY COMMISSION

**/RA/**

William D. Beckner, Program Director  
Operating Reactor Improvements Program  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation

Attachments:

1. Model Safety Evaluation
2. Proposed No Significant Hazards Consideration Determination
3. Sample Model Application

## **Model Safety Evaluation**

U.S. Nuclear Regulatory Commission

Office of Nuclear Reactor Regulation

Consolidated Line Item Improvement

Modified Technical Specification Task Force (TSTF) Change TSTF-359, Revision 8

Changes to Limiting Condition for Operation 3.0.4 and Surveillance Requirement 3.0.4

Regarding Mode Change Limitations

### **1.0 INTRODUCTION**

On July 17, 2002, the Nuclear Energy Institute (NEI) Risk Informed Technical Specifications Task Force (RITSTF) submitted proposed change, TSTF-359, Revision 7, to the standard technical specifications (STS) (NUREGs 1430-1434) on behalf of the industry. TSTF-359, Revision 7, is a proposal to change the STS Limiting Condition for Operation (LCO) 3.0.4 and Surveillance Requirement (SR) 3.0.4 requirements regarding mode change limitations. The proposed change would modify LCO 3.0.4 and SR 3.0.4 by risk informing limitations on entering the mode of applicability of a LCO. The first Consolidated Line Item Improvement Process (CLIIP) Federal Register Notice with respect to this change was published on August 2, 2002, requesting public comments. In response to the public comments, the NRC staff decided that TSTF-359, Revision 7, be revised. The RITSTF submitted TSTF-359, Revision 8, on December 4, 2002. Two additional changes were deemed necessary. The NRC staff has prepared this revised model safety evaluation incorporating changes resulting from public comments. TSTF-359, Revision 8, as modified, provides the complete approved change.

This proposal is one of the industry's initiatives under the risk-informed technical specifications program. These initiatives are intended to maintain or improve safety while reducing

unnecessary burden and to make technical specification requirements consistent with the Commission's other risk-informed regulatory requirements, in particular the maintenance rule.

The current technical specifications (TS) specify that a nuclear power plant cannot go to higher modes of operation<sup>2</sup> (i.e., move towards power operation) unless all TS systems, normally required for the higher mode, are operable. This limitation is included (with several exceptions for some plants) in LCO 3.0.4 and SR 3.0.4. LCO 3.0.4 and SR 3.0.4 in the STS currently state in part that when an LCO or SR is not met, "entry into a MODE or other specified condition in the applicability shall not be made except when the associated actions to be entered permit continued operation in the MODE or other specified condition in the applicability for an unlimited period of time." The industry believes that this requirement is unnecessarily restrictive and can unduly delay plant startup while considerable resources are being used to resolve startup issues that are risk insignificant or low risk. A maintenance activity that takes longer than planned can delay a mode change and adversely impact a utility's orderly plant startup and return to power operation. The objective of the proposed change is to provide additional operational flexibility without compromising plant safety.

The proposed changes to LCO 3.0.4 and SR 3.0.4 would allow, for systems and components, mode changes into a TS condition that has a specific required action and completion time. The licensee will utilize the LCO 3.0.4 and SR 3.0.4 allowances only when they determine that there is a high likelihood that the LCO will be satisfied within the LCO completion time (CT), after the mode change. In addition, the LCO 3.0.4 and SR 3.0.4 allowances can be applied to values and parameters in specifications when explicitly stated in the TS (non-system/component TS such as: Reactor Coolant System Specific Activity). These changes are in addition to the current mode change allowance when a required action has an indefinite completion time. The

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<sup>2</sup>MODE numbers decrease in the transition "up to a higher mode of operation;" power operation is MODE 1.

LCO 3.0.4 and SR 3.0.4 mode change allowances are not permitted for the systems and components (termed “higher risk”) listed in Section 3.1.1, “Identification of Risk-Important TS Systems and Components,” for the modes specified. Two examples are: (1) Westinghouse plants cannot transition from Mode 5 to Mode 4 without a High Head Safety Injection System train operable; and, (2) Westinghouse plants cannot transition up into any mode with an inoperable required emergency diesel generator.

## 2.0 REGULATORY EVALUATION

In 10 CFR 50.36, the Commission established its regulatory requirements related to the content of TS. Pursuant to 10 CFR 50.36, TS are required to include items in the following five specific categories related to station operation: (1) safety limits, limiting safety system settings, and limiting control settings; (2) limiting conditions for operation (LCOs); (3) surveillance requirements (SRs); (4) design features; and (5) administrative controls. The rule does not specify the particular requirements to be included in a plant’s TS. As stated in 10 CFR 50.36(c)(2)(i), the “Limiting conditions for operation are the lowest functional capability or performance levels of equipment required for safe operation of the facility. When a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specification ...” By convention, the LCOs are contained in Sections 3.1 through 3.10 of the TS. TS Section 3.0, on “LCO and SR Applicability,” provides details or ground rules for complying with the LCOs. LCO 3.0.4 and SR 3.0.4 address requirements for LCO compliance when transitioning between modes of operation.

Technical specifications have taken advantage of risk technology as experience and capability have increased. Since the mid-1980's, the NRC has been reviewing and granting improvements to technical specifications that are based, at least in part, on probabilistic risk assessment (PRA) insights. In its final policy statement on technical specification

improvements of July 22, 1993, the Commission stated that it expects that licensees will utilize any plant specific PRA or risk survey in preparing their technical specification-related submittals. In evaluating these submittals, the staff applies the guidance in RG 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," dated July 1998 and in RG 1.177, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications," dated August 1998. The staff has appropriately adapted this guidance to assess the acceptability of upward mode changes with equipment inoperable. This review had the following objectives:

- To ensure that the plant risk does not increase unacceptably during the actual implementation of the proposed change (e.g., when the plant enters a higher mode while an LCO is not met). This risk increase is referred to as "temporary."
- To compare and assess the risk impact of the proposed change to the acceptance guidelines of the Commission's Safety Goal Policy Statement, as documented in RG 1.174. The risk impact, which is measured by the average yearly risk increase associated with the change, aims at minimizing the "cumulative" risk associated with the proposed change so that the plant's average baseline risk is maintained within a minimal range.
- To assess the licensee's ability to identify risk-significant configurations resulting from maintenance or other operational activities and take appropriate compensatory measures to avoid such configurations.

The staff reviewed the reliance on 10 CFR 50.65(a)(4) for the non-higher-risk systems and components, and related guidance to assess and manage the risk of upward mode changes. The Commission has found that compliance with the industry guidance for implementation of 10 CFR 50.65(a)(4), as endorsed by RG 1.182 and mandated by LCO 3.0.4, SR 3.0.4 and

SR 3.0.3, satisfies the configuration risk management objectives of RG 1.177 for technical specification surveillance interval and completion time extensions. Reliance on 10 CFR 50.65(a)(4) processes that are consistent with the provisions of the NRC-endorsed industry guidance was also found adequate for managing risk of missed surveillances as described in the Federal Register on September 28, 2001 (66 FR 49714).

The staff review also had the objective of ensuring that existing inspection programs have the necessary controls in place to allow NRC staff to oversee the implementation of the proposed change, reliance on 10 CFR 50.65(a)(4) processes or programs, and the ability to adequately assess the licensee's performance associated with risk assessments. The review encompassed inspection procedures (i.e., NRC Inspection Procedure 62709 (12/28/00), "Configuration Risk Assessment and Risk Management Process," and NRC Inspection Procedure 71111.13 (1/17/02), "Maintenance Risk Assessments and Emergent Work Control"), the significance determination process (SDP) (i.e., draft "Maintenance Risk Assessment and Risk Management Significance Determination Process"), enforcement guidance (i.e., draft Enforcement Manual Section 8.1.11, "Actions Involving the Maintenance Rule"), and the associated reactor oversight process.

#### 2.1 Proposed Change to LCO 3.0.4 and SR 3.0.4

Currently LCO 3.0.4 does not allow entrance into a higher mode (or other specified condition) in the applicability when an LCO is not met, except when the associated actions to be entered permit continued operation in that mode or condition indefinitely or a specific exception is granted. Similarly, when an LCO's surveillances have not been met within their specified frequency, entry into a higher mode (or other specified condition) is not allowed by SR 3.0.4. The current STS<sup>3</sup> LCO 3.0.4 reads:

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<sup>3</sup> Plant specific wording for current equivalent LCO 3.0.4 is similar to current STS LCO 3.0.4 wording.

*“When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall not be made except when the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time. This Specification shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.*

*Exceptions to this Specification are stated in the individual Specifications. These exceptions allow entry into MODES or other specified conditions in the Applicability when the associated ACTIONS to be entered allow unit operation in the MODE or other specified condition in the Applicability only for a limited period of time.*

*LCO 3.0.4 is only applicable for entry into a MODE or other specified conditions in the Applicability in [MODES 1, 2, 3, and 4 {for PWRs}][MODES 1, 2, and 3 {for BWRs}].”*

The revised LCO 3.0.4 will read:

*“When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall only be made*

- (a) when the associated Actions to be entered permit continued operation in that MODE or other specified condition in the Applicability for an unlimited period of time, or*
- (b) after performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate; exceptions to this Specification are stated in the individual Specifications, or*

(c) *when an allowance is stated in the individual value or parameter Specification.*

*This Specification shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.”*

The current STS<sup>4</sup> SR 3.0.4 reads:

*“Entry into a MODE or other specified condition in the Applicability of an LCO shall not be made unless the LCO’s Surveillances have been met within their specified frequency. This provision shall not prevent entry into MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.*

*SR 3.0.4 is only applicable for entry into a MODE or other specified conditions in the Applicability in [MODES 1, 2, 3, and 4 {for PWRs}][MODES 1, 2, and 3 {for BWRs}].”*

The revised SR 3.0.4 will conform to the changes to LCO 3.0.4 and read:

*“Entry into a MODE or other specified condition in the Applicability of an LCO shall only be made when the LCO’s Surveillances have been met within their specified frequency, except as provided by SR 3.0.3. When an LCO is not met due to Surveillances not having been met, entry into a MODE or other specified condition in the Applicability shall only be made in accordance with LCO 3.0.4.*

*This provision shall not prevent entry into MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.”*

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<sup>4</sup> Plant specific wording for current equivalent SR 3.0.4 is similar to current STS SR 3.0.4 wording.

The proposed LCO 3.0.4(a) retains the current allowance for when the required actions allow indefinite operation. The proposed LCO 3.0.4(b) allows entering modes or other specified conditions in the applicability except when higher-risk systems and components (listed in Section 3.1.1), for the mode being entered, are inoperable. The decision for entering a higher mode or condition in the applicability of the LCO will be made by plant management after the required risk assessment has been performed and requisite risk management actions established, through the program established to implement 10 CFR 50.65(a)(4). Entry into the modes or other specified conditions in the applicability of the TS shall be for no more than the duration of the applicable required actions completion time, or until the LCO is met. Current notes in individual specifications that permitted mode changes are now encompassed by LCO 3.0.4(b) and can be removed. Notes that prohibit mode changes under LCO 3.0.4(b) must be added (i.e., for higher-risk systems and components). The proposed LCO 3.0.4(b) allowance can involve multiple components in a single LCO or in multiple LCOs; however, use of the LCO 3.0.4(b) provisions are always contingent upon completion of a 10 CFR 50.65(a)(4) based risk assessment.

The notes limiting the applicability (to Modes 1, 2, 3, and 4 for PWRs, and to Modes 1, 2, and 3 for BWRs) of the current STS LCO 3.0.4 and STS SR 3.0.4 are holdovers from the existing Standard Technical Specifications (STS). The notes limiting the applicability of LCO 3.0.4 and SR 3.0.4 are no longer needed and are removed by TSTF-359, Revision 8. The industry owners groups analyses would subsequently support adding notes to various TS, as defined by the tables of higher-risk systems, precluding entry into Modes 5 and 6 for PWRs, and Modes 4 and 5 for BWRs. However, the addition of notes in these cases is made unnecessary by action statements that require immediate completion times, which means that entry into the Mode or other specified condition in the Applicability is not allowed and the notes would be superfluous.

LCO 3.0.4 allowances related to values and parameters of TS are not typically addressed by LCO 3.0.4(b) risk assessments, and are therefore addressed by a new LCO 3.0.4 (c).

LCO 3.0.4 (c) refers to allowances already in the TS and annotated in the individual TS.

LCO 3.0.4 (c) also allows for entry into the modes or other specified conditions in the applicability of a TS for no more than the duration of the applicable required actions completion time or until the LCO is met or the unit is not within the Applicability of the TS.

### 3.0 Technical Evaluation

During the development of the current STS, improvements were made to LCO 3.0.4, such as clarifying its applicability with respect to plant shutdowns, cold shutdown mode and refueling mode. In addition, during the STS development, almost all the LCOs with completion times greater than or equal to 30 days, and many LCOs with completion times greater than or equal to 7 days, were given individual LCO 3.0.4 exceptions. During some conversions to the STS, individual plants provided acceptable justifications for other LCO 3.0.4 exceptions. All of these specific LCO 3.0.4 exceptions allow entry into a mode or other specified condition in the TS applicability while relying on the TS required actions and associated completion times. The proposed change under evaluation would provide standardization and consistency to the use and application of LCO 3.0.4, both internal to and between each of the specifications and STS NUREGs. This proposed change will also ensure consistency through the utilization of appropriate levels of risk assessment of plant configurations for application of LCO 3.0.4. However, nothing in this safety evaluation should be interpreted as encouraging upward mode transition with inoperable equipment. Good practice should dictate that such transitions should normally be initiated only when all required equipment is operable and that mode transition with inoperable equipment should be the exception rather than the rule.

The current LCO 3.0.4(a) allowances are retained in the proposal and do not represent a change in risk from the current situation. The LCO 3.0.4(b) allowances apply to systems and

components, and require a risk assessment prior to utilization to ensure an acceptable level of safety is maintained. The LCO 3.0.4(c) allowances apply to parameters and values which have been previously approved by the NRC in a plant's specific TS. The licensee will provide in their TS Bases a discussion and list of each NRC-approved, LCO 3.0.4(c)-specific value and parameter allowance. The bases of LCO 3.0.4 will be revised to explain the new allowances and their utilization.

The staff did a qualitative assessment of the risk impact of the proposed change in LCO 3.0.4(b) allowances by evaluating how the licensee's implementation of the proposed risk-informed approach is expected to meet the requirements of the applicable RGs. The staff referred to the guidance provided in RG 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," and in RG 1.177, "An approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications." RG 1.177 provides the staff's recommendations on utilizing risk information to assess the impact of proposed changes to nuclear power plant technical specifications on the risk associated with plant operation. Although RG 1.177 does not specifically address the type of generic change in this proposal, the staff considered the approach documented in RG 1.177 in evaluating the risk information provided in support of the proposed changes in LCO 3.0.4.

The staff's evaluation of how the implementation of the proposed risk-informed approach, used to justify LCO 3.0.4(b) allowances, agrees with the objectives of the guidance outlined in RG 1.177 is discussed in Section 3.1. Oversight of the risk-informed approach associated with the LCO 3.0.4(b) allowances is discussed in Sections 3.2.

### 3.1 Evaluation of Risk Management

Both the temporary and cumulative risk of the proposed change are adequately limited. The temporary risk is limited by the exclusion of higher-risk systems and components, and completion time limits contained in technical specifications (Section 3.1.1). The cumulative risk

is limited by the temporary risk limitations and by the expected low frequency of the proposed mode changes with inoperable equipment (Section 3.1.2). Adequate NRC oversight of the licensee's ability to use the LCO 3.0.4(b) provisions under appropriate circumstances, i.e., to identify risk-significant configurations when entering a higher mode or condition in the applicability of an LCO (Section 3.1.3) is provided by NRC inspection of the licensee's implementation of 10 CFR 50.65(a)(4) as applied to the proposed change.

### 3.1.1 Temporary Risk Increases

RG 1.177 proposes the incremental conditional core damage probability (ICCDP) and the incremental conditional large early release probability (ICLERP) as appropriate measures of the increase in probability of core damage and large early release, respectively, during the period of implementation of a proposed TS change. In addition, RG 1.177 stresses the need to preclude potentially high risk configurations introduced by the proposed change. The ICCDP associated with any specified plant condition, such as the condition introduced by entering a higher mode with plant equipment inoperable, is expressed by the following equation:

$$\text{ICCDP} = \Delta R d = (R_1 - R_o) d \quad (1)$$

where

$\Delta R$  = the conditional risk increase, in terms of core damage frequency (CDF), caused by the specified condition

$d$  = the duration of the specified plant condition

$R_1$  = the plant CDF with the specified condition permanently present

$R_o$  = the plant CDF without the specified condition

The same expression can be used for ICLERP by substituting the measure of risk, i.e., large early release frequency (LERF) for CDF. The magnitude of the ICCDP and ICLERP values associated with plant conditions applicable to LCO 3.0.4(b) allowances can be managed by

controlling the conditional risk increase,  $\Delta R$  (in terms of both CDF and LERF) and the duration,  $d$ , of such conditions. The following sections discuss how the key elements of the proposed risk-informed approach, used to justify LCO 3.0.4(b) allowances, are expected to limit  $\Delta R$  and  $d$  and, thus, prevent any significant temporary risk increases.

#### Identification of Risk-Important TS Systems and Components

A major element that limits the risk of the proposed mode change flexibility is the exclusion of certain systems and associated LCOs for the mode change allowance. Technical specifications allow operation in Mode 1 (power operation) with specified levels of inoperability for specified times. This provides a benchmark of currently acceptable risk against which to measure any incremental risk inherent in the proposed LCO 3.0.4(b). If a system inoperability accrues risk at a higher rate in one or more of the transition modes than it would in Mode 1, then an upward transition into that mode should not be allowed without demonstration of a high degree of experience and sophistication in risk management. However, the risk management process evaluated in Section 3.1.3 is adequate if higher-risk systems/components are excluded from the scope of LCO 3.0.4(b).

The importance of most TS systems in mitigating accidents increases as power increases. However, some TS systems are relatively more important during lower power and shutdown operations, because:

- certain events are peculiar to modes of plant operation other than power operation,
- certain events are more probable at modes of plant operation other than power operation,
- some modes of plant operation have less mitigation system capability than power operation.

The risk information submitted in support of the proposed changes to LCO 3.0.4 and SR 3.0.4 includes qualitative risk assessments performed by each owners group to identify higher risk systems and components at the various modes of operation, including transitions between modes, as the plant moves upward from the refueling mode of operation toward power operation. The owners groups' generic qualitative risk assessments are included as attachments to TSTF-359, Revision 8. Each of the owners groups' generic qualitative risk assessments discuss the technical approach used and the systems/components subsequently determined to be of higher risk significance; the systems/components not to be granted the LCO 3.0.4 allowances for the various modes are listed. The owners groups generic qualitative risk assessments are:

- BWR owners' group Risk-Informed Technical Specification Committee, "Technical Justification to Support Risk-Informed Improvements to Technical Specification Mode Restraints for BWR Plants," General Electric Company GE-NE A13-00464 (Rev[2])
- "B&W owners group Qualitative Risk Assessment for Increased Flexibility in MODE Restraints," Framatome Technologies BAW-2383
- Combustion Engineering owners group (CEOG) Task 1181, "Qualitative Risk Assessment for Relaxation of Mode Entry Restraints," CE Nuclear Power LLC, CE NPSD-1207 (Rev[0])
- "WOG Qualitative Risk Assessment Supporting Increased Flexibility in MODE Restraints."

Following interactions with the staff, all owners groups used the same systematic approach in their qualitative risk assessments to identify the higher-risk systems in the STS, consisting of the following steps:

- identification of plant conditions (i.e., plant parameters and availability of key mitigation systems) associated with changes in plant operating modes while returning to power

- identification of key activities that have the potential to impact risk and which are in progress during transitions between modes while the plant is returning to power
- identification of applicable accident initiating events for each mode or other specified condition in the applicability
- identification of the higher-risk systems and components by combining the information in the first three steps (qualitative risk assessment)

The risk assessments properly used the results and insights from previous deterministic and probabilistic studies to systematically search for plant conditions in which certain key plant components are more important in mitigating accidents than during operation at power (Mode 1). This search was systematic, taking the following factors into account for the various stages of returning the plant to power:

- the status of accident mitigation and normally operating systems
- the status of key plant parameters such as reactor coolant system pressure
- the key activities that are in progress during transitions between modes which have the potential to impact risk (e.g., the transfer from auxiliary to main feedwater at some PWR plants when Mode 1 is entered)
- the applicable accident initiating events for each mode of plant operation
- design and operational differences among plants or groups of plants

The following systems and components were identified by each of the four owners groups as higher-risk systems and components, when the plant is entering a new mode.

**Boiling Water Reactor Owners Group (BWROG) Plants**

<u>System</u>	<u>BWR Type</u>	<u>Entering Mode</u>
High Pressure Coolant Injection (HPCI) System	BWR 3 & 4	2, 1
High Pressure Core Spray (HPCS)	BWR 5 & 6	2, 1
Reactor Core Isolation Cooling (RCIC) System	BWR 3, 4, 5 & 6	2, 1
Isolation Condenser	BWR 2	2, 1
Diesel Generators (including other		
Emergency/Shutdown AC Power Supplies)	All	All
Hardened Wetwell Vent System	BWR 2, 3 & 4 with Mark I	
	Containment	3, 2, 1
Residual Heat Removal System	All	4

**Babcock & Wilcox Owners Group (B&WOG) Plants**

<u>System</u>	<u>Entering Mode</u>
Emergency Diesel Generators (EDG) &	
Hydro-Electric Units for Oconee	5, 4, 3, 2, 1
Emergency Feedwater (EFW) System	1
Decay Heat Removal (DHR) System	5, 4

**Combustion Engineering Owners Group (CEOG) Plants**

<u>System</u>	<u>Entering Mode</u>
Emergency Diesel Generators (EDGs)	5, 4, 3, 2, 1
Auxiliary Feedwater/Emergency Feedwater (AFW/EFW) System	4, 3, 2, 1
High Pressure Safety Injection (HPSI) System	4, 3 (below 1700 psia)
LTOP/PORVs (when used for Low Temperature Overpressure Protection (LTOP))	5, 4 (below set temperature)
Shutdown Cooling System (Low Pressure Safety Injection (LPSI) pumps)	5

**Westinghouse Owners Group (WOG) Plants**

<u>System</u>	<u>Entering Mode</u>
Emergency Diesel Generators (EDGs)	5, 4, 3, 2, 1
Auxiliary Feedwater (AFW) System (for plants depending on AFW for startup)	4, 3, 2, 1
High Head Safety Injection System	4
Cold Overpressure Protection System	5, 4
Residual Heat Removal (RHR) System	5

If a licensee identifies a higher-risk system for only some of the modes of applicability, the TS for that system would be modified by a note that reads, for example, "LCO 3.0.4(b) is not applicable when entering MODE 1 from MODE 2." Systems identified as higher risk for Modes 5

and 6 for PWRs, and Modes 4 and 5 for BWRs, are also excluded from transitioning up to the mode of higher risk, and as previously discussed, notes for those transitions are superfluous. In addition, mode transitions for Modes 5 and 6 for PWRs, and Modes 4 and 5 for BWRs, will be addressed by administrative controls.

In summary, the staff's review of the owners groups qualitative risk assessments finds that they are of adequate quality to support the application (i.e., they identify the higher-risk systems and components) associated with entering higher modes of plant operation with equipment inoperable while returning to power.

*[Plant Specific changes will be described here.]*

#### Limited Time in TS Required Actions

Any temporary risk increase will be limited by, among other factors, duration constraints imposed by the TS CTs of the inoperable systems. For the systems and components which are not higher risk, any temporary risk increase associated with the proposed allowance will be smaller than what is considered acceptable when the same systems and components are inoperable at power. This is due to the fact that CTs associated with the majority of TS systems and components were developed for power operation and pose a smaller plant risk for action statement entries initiated or occurring at lower modes of operation as compared to power operation.

The LCO 3.0.4(b) allowance will be used only when the licensee determines that there is a high likelihood that the LCO will be satisfied following the mode change. This will minimize the likelihood of additional temporary risk increases associated with the need to exit a mode due to failure to restore the unavailable equipment within the CT. In most cases, licensees will enter into a higher mode with the intent to move up to Mode 1 (power operation). As discussed in Section 3.2, the revised reactor oversight process monitors unplanned power changes as a performance indicator. The reactor oversight process thus discourages licensees from entering

a mode or other specified condition in the applicability of an LCO, and moving up in power, when there is a likelihood that the mode would have to be subsequently exited due to failure to restore the unavailable equipment within the CT. Another disincentive for licensees to enter a higher mode when an LCO is not met is related to reporting requirements. 10 CFR 50.72 and 50.73 make it clear that a report is required when a nuclear plant shutdown or mode change is required by TS. The NRC's oversight program will provide the framework for inspectors and other staff to follow the history at a specific plant of entering higher modes while an LCO is not met, and use such information in assessing the licensee's actions and performance.

### 3.1.2 Cumulative Risk Increases

The cumulative risk impact of the change to allow the plant to enter a higher mode of operation with one or more safety-related components unavailable (as proposed here), is measured by the average yearly risk increase associated with the change. In general, this cumulative risk increase is assessed in terms of both CDF and LERF (i.e.,  $\Delta CDF$  and  $\Delta LERF$ , respectively). The increase in CDF due to the proposed change is expressed by the following equation, which integrates the risk impact from all expected specified conditions (i.e., all expected plant conditions caused by mode changes with various TS systems and components unavailable).

$$\Delta CDF = \sum (\Delta CDF_i) = \sum ICCDP_i f_i \quad (2)$$

where

$\Delta CDF_i$  = the CDF increase due to specified condition i

$ICCDP_i$  = the ICCDP associated with specified condition i

$f_i$  = the average yearly frequency of occurrence of specified condition i

A similar expression can be used for  $\Delta\text{LERF}$  by substituting the measure of risk, i.e., LERF for CDF. The magnitude of the  $\Delta\text{CDF}$  and  $\Delta\text{LERF}$  values associated with plant conditions applicable to LCO 3.0.4(b) allowances can be managed by controlling the temporary risk increases, in terms of both CDF and LERF (i.e., ICCDP and ICLERP), and the frequency (f), of each of such conditions. In addition to the points made in the previous section regarding temporary risk increases, the following points put into perspective how the key elements of the proposed risk-informed approach, used to justify an LCO 3.0.4(b) allowance, are expected to prevent significant cumulative risk increases by limiting the frequency of its use:

- The frequency of risk significant conditions will be limited by not providing the LCO 3.0.4(b) allowances to the higher risk systems and components.
- The frequency of risk significant conditions will be limited by the requirement to assess the likelihood that the LCO will be satisfied following the mode change.
- The frequency of risk significant conditions is limited by the fact that such conditions can occur only when the plant is returning to power following shutdown, i.e., during a small fraction of time per year (data over the past five years indicate that the plants are averaging 2.1 startups per year).

The addition of the proposed LCO 3.0.4(b) allowances to the plant maintenance activities is not expected to change the plant's average (cumulative) risk significantly.

### 3.1.3 Risk Assessment and Risk Management of Mode Changes

With all safety systems and components operable, a plant can transition up in mode to power operation. With one or more system(s) or component(s) inoperable, this change permits a plant to transition up in mode to power operation if the inoperable system(s) or component(s) are not in the pre-analyzed higher risk category, a 10 CFR 50.65(a)(4) based risk assessment is performed prior to the mode transition, and the requisite risk management actions are taken.

The proposed TS Bases state, "When an LCO is not met, LCO 3.0.4 also allows entering MODES or other specified conditions in the Applicability following assessment of the risk impact and determination that the impact can be managed. The risk assessment may use quantitative, qualitative, or blended approaches, and the risk assessment will be conducted using the plant program, procedures, and criteria in place to implement 10 CFR 50.65(a)(4), which requires that risk impacts of maintenance activities to be assessed and managed." It should be noted that, the risk assessment, for the purposes of LCO 3.0.4(b), must take into account all inoperable TS equipment regardless whether the equipment is included in the licensee's normal 10 CFR 50.65(a)(4) risk assessment scope. The risk assessments will be conducted using the procedures and guidance endorsed by Regulatory Guide 1.182, "Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants." The results of the risk assessment shall be considered in determining the acceptability of entering the MODE or other specified condition in the Applicability, and any corresponding risk management actions. ... A risk assessment and establishment of risk management actions, as appropriate, are required for determination of acceptable risk for entering MODES or other specified conditions in the Applicability when an LCO is not met. Elements of acceptable risk assessment and risk management actions are included in Section 11 of NUMARC 93-01 "Assessment of Risk Resulting from Performance of Maintenance Activities," as endorsed by RG 1.182, which addresses general guidance for conduct of the risk assessment, gives quantitative and qualitative guidelines for establishing risk management actions, and provides example risk management actions. These risk management actions include actions to plan and conduct other activities in a manner that controls overall risk, actions to increase risk awareness by shift and management personnel, actions to reduce the duration of the conditions, actions to minimize the magnitude of risk increases (establishment of backup success paths or compensatory measures), and determination that the proposed MODE change is acceptable.

The guidance references state that a licensee's risk assessment process should be sufficiently robust and comprehensive to assess risk associated with maintenance activities during power operation, low power and shutdown conditions (all modes of operation), including changes in plant conditions. NUMARC 93-01 states that the risk assessment should include consideration of: the degree of redundancy available for performance of the safety function(s) served by the out-of-service equipment; the duration of the out-of-service condition; component and system dependencies that are affected; the risk impact of performing the maintenance during shutdown versus at power; and, the impact of mode transition risk. For power operation, key plant safety functions are those that ensure the integrity of the reactor coolant pressure boundary, ensure the capability to shut down and maintain the reactor in safe shutdown condition, and ensure the capability to prevent or mitigate the consequences of accidents that could result in potentially significant offsite exposures.

While the inoperabilities permitted by the completion times of technical specification required actions take into consideration the safety significance and redundancy of the system or components within the scope of an LCO, the completion times generally do not address or consider concurrent system or component inoperabilities in multiple LCOs. Therefore, the performance of the 10 CFR 50.65(a)(4) risk assessment which looks at the entire plant configuration is essential (and required) prior to changing operational mode. The 10 CFR 50.65(a)(4) based risk assessment will be used to confirm (or reject) the appropriateness of transitioning up in mode given the actual status of plant safety equipment.

The risk impact on the plant condition of invoking an LCO 3.0.4(b) allowance will be assessed and managed through the program established to implement 10 CFR 50.65(a)(4). This program is consistent with RG 1.177 and RG 1.174 in its approach. The implementation guidance for paragraph (a)(4) of the Maintenance Rule addresses controlling temporary risk increases resulting from maintenance activities. This guidance, consistent with guidance in RG 1.177,

establishes action thresholds based on qualitative and quantitative considerations and risk management actions. Significant temporary risk increases following an LCO 3.0.4(b) allowance are unlikely to occur unless:

- high-risk configurations are allowed (e.g., certain combinations of multiple component outages), or
- risk management of plant operation activities is inadequate.

The requirements associated with the proposed change are established to ensure that such conditions will not occur.

The thresholds of the cumulative (aggregate) risk impacts, assessed pursuant to 10 CFR 50.65(a)(4) and the associated implementation guidance, are based on the permanent change guidelines in NRC RG 1.174. Therefore, licensees will manage the risk exercising LCO 3.0.4 in conjunction with the risk from other concurrent plant activities to ensure that any increase, in terms of core damage frequency (CDF) and large early release frequency (LERF) will be small and consistent with the Commission's Safety Goal Policy Statement.

### 3.2 Oversight

The reactor oversight process (ROP) provides a means for assessing the licensee's performance in the application of the proposed mode change flexibility. The adequacy of the licensee's assessment and management of maintenance-related risk is addressed by existing inspection programs and guidance for 50.65(a)(4). Although the current versions of that guidance do not specifically address application of the licensee's (a)(4) program to support risk-informed technical specifications, it is expected that in most cases, risk assessment and management associated with risk-informed technical specifications would be required by (a)(4) anyway because maintenance activities will be involved.

Adoption of the proposed change will make failure to assess and manage the risk of an upward mode change with inoperable equipment covered by technical specifications, prior to

commencing such a mode change, a violation of technical specifications. Further, as explained above in general, under most foreseeable circumstances, such a change in configuration would also require a risk assessment under 10 CFR 50.65(a)(4). Inoperable systems or components will necessitate maintenance to restore them to operability, and hence a 10 CFR 50.65(a)(4) risk assessment would be performed prior to the performance of those maintenance actions (except for immediate plant stabilization and restoration actions if necessary). Further, before altering the plant's configuration, including plant configuration changes associated with mode changes, the licensee must update the existing (a)(4) risk assessment to reflect those changes.

The Federal Register Notice issuing a revision to the maintenance rule, 10 CFR 50.65, (Federal Register, Vol 64 No 137, Monday, July 19, 1999, pg 38553), along with NRC Inspection Procedure 71111.13, and Section 11, dated February 22, 2000, "Assessment of Risk Resulting from Performance of Maintenance Activities," of NUMARC 93-01, all indicate that to determine the safety impact of a change in plant conditions during maintenance, a risk assessment must be performed before changing plant conditions. The bases for the proposed TS change mandate that the risk assessment and management of upward mode changes will be conducted under the licensee's program and process for meeting 10 CFR 50.65(a)(4). Oversight of licensee performance in assessing and managing the risk of plant maintenance activities is conducted principally by inspection in accordance with Reactor Oversight Program Baseline Inspection Procedure (IP) 71111.13, "Maintenance Risk Assessment and Emergent Work Control." Supplemental IP 62709, "Configuration Risk Assessment and Risk Management Process," is utilized to evaluate the licensee's process, when necessary.

The ROP is described in overview in NUREG-1649, Rev 3, "Reactor Oversight Process," and in detail in the NRC Inspection Manual. Inspection Procedure 71111.13 requires verification of performance of risk assessments when they are required by 10 CFR 50.65(a)(4) and in accordance with licensee procedures. The procedure also requires verification of the adequacy

of those risk assessments and verification of effective implementation of licensee-prescribed risk management actions. The rule itself requires such assessment and management of risk prior to maintenance activities, including preventive maintenance, surveillance and testing, (and promptly for emergent work) during all modes of plant operation. The guidance documents for both industry implementation of (a)(4) and NRC oversight of that implementation indicate that changes in plant configuration (which would include mode changes) in support of maintenance activities must be taken into account in the risk assessment and management process.

Revisions to NRC inspection guidance and licensee implementation procedures will be needed to address oversight of risk assessment and management required by TS in support of mode changes that are not already required under the circumstances by (a)(4). This consideration provides performance-based regulatory oversight of the use of the proposed flexibility, and a disincentive to use the flexibility without the requisite care in planning.

In addition, the staff is in the process of developing detailed significance determination process (SDP) guidance for use in assessing inspection findings related to 10 CFR 50.65(a)(4). This guidance was issued in draft for comment and is anticipated to become final during 2003. The ROP considers inspection findings and performance indicators in evaluating licensee ability to operate safely. The SDP is used to determine the significance of inspection findings related to licensee assessment and management of the risk associated with performing maintenance activities under all plant operating or shutdown conditions. Unplanned reactor scrams and unplanned power changes are two of the Reactor Safety Performance Indicators that the ROP utilizes to assess licensee performance and inform the public. The ROP will provide a disincentive to entering into power operation (Mode 1), when there is a significant likelihood that the mode would have to be subsequently exited due to failure to restore the unavailable equipment within the completion time.

### 3.3 Summary

The industry, through the Nuclear Energy Institute (NEI) Risk Informed Technical Specifications Task Force (RITSTF), has submitted a proposed technical specification (TS) change to allow entry into a higher mode of operation, or other specified condition in the TS applicability, while relying on the TS conditions, and associated required actions and completion times, provided a risk assessment is performed to confirm the acceptability of that action. The proposal revises standard technical specification (STS) LCO 3.0.4 and SR 3.0.4, and their application to the TS. New paragraphs (a), (b), and (c) are proposed for LCO 3.0.4.

The proposed LCO 3.0.4(a) retains the current allowance, permitting the mode change when the TS required actions allow indefinite operation.

Proposed LCO 3.0.4(b) is the change to allow entry into a higher mode of operation, or other specified condition in the TS applicability, while relying on the TS conditions and associated required actions and completion times, provided a risk assessment is performed to confirm the acceptability of that action for the existing plant configuration. The staff review finds that the process proposed by industry for assessing and managing risk during the implementation of the proposed LCO 3.0.4(b) allowances, meets Commission guidance for technical specification changes. Key elements of this process are listed below.

- A risk assessment shall be performed before any LCO 3.0.4(b) allowance is invoked.
- The risk impact on the plant condition of invoking an LCO 3.0.4(b) allowance will be assessed and managed through the program established to implement 10 CFR 50.65(a)(4) and the associated guidance in RG 1.182. Allowing entry into a higher mode or condition in the applicability of an LCO after an 10 CFR 50.65(a)(4) based risk assessment and appropriate risk management actions are taken for the existing plant configuration will ensure that plant safety is maintained.

- The LCO 3.0.4(b) allowance will be used only when the licensee determines that there is a high likelihood that the LCO will be satisfied within the required action's completion time.
- TS systems and components which may be of higher risk during mode changes have been identified generically by each owner's group for each plant operational mode or condition. Licensees will identify such plant-specific systems and components in the individual plant TS. The proposed LCO 3.0.4(b) allowance does not apply to these systems and components for the mode or condition in the applicability of an LCO at which they are of higher risk.
- Plants adopting LCO 3.0.4(b) will ensure that plant procedures in place to implement 10 CFR 50.65(a)(4) address the situation where entering a mode or other specified condition in the applicability is contemplated with plant equipment inoperable. Such plant procedures typically follow the guidance in NUMARC 93-01, Section 11, as revised in February 2000 and endorsed by NRC RG 1.182.

The NRC's reactor oversight process provides the framework for inspectors and other staff to oversee the implementation of 10 CFR 50.65(a)(4) requirements at a specific plant and assess the licensee's actions and performance.

The LCO 3.0.4(b) allowance does not apply to values and parameters of the technical specifications that have their own respective LCOs (e.g., Reactor Coolant System Specific Activity), but instead those values and parameters are addressed by LCO 3.0.4(c). The TS values and parameters for which mode transition allowances apply, will have a note that states LCO 3.0.4(c) is applicable.

The objective of the proposed change is to provide additional operational flexibility without compromising plant safety.

#### 4.0 State Consultation

In accordance with the Commission's regulations, the [ ] State official was notified of the proposed issuance of the amendment. The State official had [(1) no comments or (2) the following comments - with subsequent disposition by the staff].

#### 5.0 Environmental Consideration

The amendments change a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change surveillance requirements. [For licensees adding a bases control program: The amendment also changes record keeping, reporting, or administrative procedures or requirements.] The NRC staff has determined that the amendments involve no significant increase in the amounts and no significant change in the types of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards considerations, and there has been no public comment on the finding [insert FR number]. Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) [and (c)(10)]. Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

#### 6.0 Conclusion

The Commission has concluded, on the basis of the considerations discussed above, that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

## **Proposed No Significant Hazards Consideration Determination**

*Description of Amendment Request:* A change is proposed to the standard technical specifications (STS)(NUREGs 1430 through 1434) and plant specific technical specifications (TS), to allow entry into a mode or other specified condition in the applicability of a TS, while in a condition statement and the associated required actions of the TS, provided the licensee performs a risk assessment and manages risk consistent with the program in place for complying with the requirements of 10 CFR 50.65(a)(4). LCO 3.0.4 exceptions in individual TS would be eliminated, and SR 3.0.4 revised to reflect the LCO 3.0.4 allowance.

*Basis for proposed no significant hazards consideration determination:* As required by 10 CFR 50.91(a), an analysis of the issue of no significant hazards consideration is presented below:

### **Criterion 1—The Proposed Change Does Not Involve a Significant Increase in the Probability or Consequences of an Accident Previously Evaluated**

The proposed change allows entry into a mode or other specified condition in the applicability of a TS, while in a TS condition statement and the associated required actions of the TS. Being in a TS condition and the associated required actions is not an initiator of any accident previously evaluated. Therefore, the probability of an accident previously evaluated is not significantly increased. The consequences of an accident while relying on required actions as allowed by proposed LCO 3.0.4, are no different than the consequences of an accident while entering and relying on the required actions while starting in a condition of applicability of the TS. Therefore, the consequences of an accident previously evaluated are not significantly affected by this change. The addition of a requirement to assess and manage the risk introduced by this change will further minimize possible concerns. Therefore, this change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

**Criterion 2—The Proposed Change Does Not Create the Possibility of a New or Different Kind of Accident from any Previously Evaluated**

The proposed change does not involve a physical alteration of the plant (no new or different type of equipment will be installed). Entering into a mode or other specified condition in the applicability of a TS, while in a TS condition statement and the associated required actions of the TS, will not introduce new failure modes or effects and will not, in the absence of other unrelated failures, lead to an accident whose consequences exceed the consequences of accidents previously evaluated. The addition of a requirement to assess and manage the risk introduced by this change will further minimize possible concerns. Thus, this change does not create the possibility of a new or different kind of accident from an accident previously evaluated.

**Criterion 3—The Proposed Change Does Not Involve a Significant Reduction in the Margin of Safety**

The proposed change allows entry into a mode or other specified condition in the applicability of a TS, while in a TS condition statement and the associated required actions of the TS. The TS allow operation of the plant without the full complement of equipment through the conditions for not meeting the TS Limiting Conditions for Operation (LCO). The risk associated with this allowance is managed by the imposition of required actions that must be performed within the prescribed completion times. The net effect of being in a TS condition on the margin of safety is not considered significant. The proposed change does not alter the required actions or completion times of the TS. The proposed change allows TS conditions to be entered, and the associated required actions and completion times to be used in new circumstances. This use is predicated upon the licensee's performance of a risk assessment and the management of plant risk. The change also eliminates current allowances for utilizing required actions and completion times in similar circumstances, without assessing and managing risk. The net change to the

margin of safety is insignificant. Therefore, this change does not involve a significant reduction in a margin of safety.

Based upon the reasoning presented above and the previous discussion of the amendment request, the requested change does not involve a significant hazards consideration.

**THE FOLLOWING EXAMPLE OF AN APPLICATION WAS PREPARED BY THE NRC STAFF TO FACILITATE USE OF THE CONSOLIDATED LINE ITEM IMPROVEMENT PROCESS (CLIIP). THE MODEL PROVIDES THE EXPECTED LEVEL OF DETAIL AND CONTENT FOR AN APPLICATION TO REVISE TECHNICAL SPECIFICATIONS REGARDING MODE CHANGE LIMITATIONS (AND ADOPTION OF A TECHNICAL SPECIFICATION BASES CONTROL PROGRAM)\* USING CLIIP. LICENSEES REMAIN RESPONSIBLE FOR ENSURING THAT THEIR ACTUAL APPLICATION FULFILLS THEIR ADMINISTRATIVE REQUIREMENTS AS WELL AS NUCLEAR REGULATORY COMMISSION REGULATIONS.**

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U. S. Nuclear Regular Commission  
Document Control Desk  
Washington, D.C. 20555

SUBJECT: PLANT NAME  
DOCKET NO. 50-  
APPLICATION FOR TECHNICAL SPECIFICATION CHANGE REGARDING MODE  
CHANGE LIMITATIONS (AND ADOPTION OF A TECHNICAL SPECIFICATIONS  
BASES CONTROL PROGRAM, AND STS SR 3.0.1 AND ASSOCIATED BASES)\*  
USING THE CONSOLIDATED LINE ITEM IMPROVEMENT PROCESS

Gentleman:

In accordance with the provisions of 10 CFR 50.90 [LICENSEE] is submitting a request for an amendment to the technical specifications (TS) for [PLANT NAME, UNIT NOS.].

The proposed amendment would modify TS requirements for mode change limitations in LCO 3.0.4 and SR 3.0.4, (and, in conjunction with the proposed change, TS requirements for a bases control program consistent with TS Bases Control Program described in Section 5.5 of the applicable vendor's Standard Technical Specifications, and STS SR 3.0.1 and associated bases.)

Attachment 1 provides a description of the proposed change (including a table of affected TS with a brief descriptor of the change), the requested confirmation of applicability, and plant-specific verifications. Attachment 2 provides the existing TS pages marked up to show the proposed change. Attachment 3 provides revised (clean) TS pages. Attachment 4 provides a summary of the regulatory commitments made in this submittal. Attachment 5 provides the existing TS Bases pages marked up to show the proposed change.

[LICENSEE] requests approval of the proposed License Amendment by [DATE], with the amendment being implemented [BY DATE OR WITHIN X DAYS].

In accordance with 10 CFR 50.91, a copy of this application, with attachments, is being provided to the designated [STATE] Official.

\* If not already in the facility Technical Specifications

I declare under penalty of perjury under the laws of the United States of America that I am authorized by [LICENSEE] to make this request and that the foregoing is true and correct. (Note that request may be notarized in lieu of using this oath or affirmation statement).

If you should have any questions regarding this submittal, please contact [NAME, TELEPHONE NUMBER]

Sincerely,

[Name, Title]

Attachments: 1. Description and Assessment  
2. Proposed Technical Specification Changes  
3. Revised Technical Specification Pages  
4. If applicable: Regulatory Commitments  
5. Proposed Technical Specification Bases Changes

cc: NRC Project Manager  
NRC Regional Office  
NRC resident Inspector  
State Contact

## **ATTACHMENT 1**

### **Description and Assessment**

#### **1.0 DESCRIPTION**

The proposed amendment would modify technical specifications (TS) requirements for mode change limitations in LCO 3.0.4 and SR 3.0.4.<sup>5</sup>

The changes are consistent with Nuclear Regulatory Commission (NRC) approved Industry/Technical Specification Task Force (TSTF) STS change TSTF-359 Revision 8, as modified by the notice in the *Federal Register* published on [DATE]. That *Federal Register* notice announced the availability of this TS improvement through the consolidated line item improvement process (CLIIP).

#### **2.0 ASSESSMENT**

##### **2.1 Applicability of Published Safety Evaluation**

[LICENSEE] has reviewed the safety evaluation dated [DATE] as part of the CLIIP. This review included a review of the NRC staff's evaluation, as well as the supporting information provided to support TSTF-359 Revision 8. [LICENSEE] has concluded that the justifications presented in the TSTF proposal and the safety evaluation prepared by the NRC staff are applicable to [PLANT, UNIT NOS.] and justify this amendment for the incorporation of the changes to the [PLANT] TS.

##### **2.2 Optional Changes and Variations**

[LICENSEE] is not proposing any variations or deviations from the TS changes described in the modified TSTF-359 Revision 8 and the NRC staff's model safety evaluation dated [DATE].

#### **3.0 REGULATORY ANALYSIS**

##### **3.1 No Significant Hazards Consideration Determination**

[LICENSEE] has reviewed the proposed no significant hazards consideration determination (NSHCD) published in the *Federal Register* as part of the CLIIP. [LICENSEE] has concluded that the proposed NSHCD presented in the Federal Register notice is applicable to [PLANT] and is hereby incorporated by reference to satisfy the requirements of 10 CFR 50.91(a).

##### **3.2 Verification and Commitments**

As discussed in the notice of availability published in the *Federal Register* on [DATE] for this TS improvement, plant-specific verifications were performed as follows:

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<sup>5</sup>[In conjunction with the proposed change, technical specifications (TS) requirements for a bases control program, consistent with the TS Bases Control Program described in Section 5.5 of the applicable vendor's standard TS (STS), shall be incorporated into the licensee's TS, if not already in the TS. Similarly, the STS requirements of SR 3.0.1 and associated bases shall be adopted by units that do not already contain them.]

The licenses has established TS Bases for [LCO 3.0.4 and SR 3.0.4] which state that use of the TS mode change limitation flexibility established by [LCO 3.0.4 and SR 3.0.4] is not to be interpreted as endorsing the failure to exercise the good practice of restoring systems or components to operable status before entering an associated mode or other specified condition in the TS Applicability.

The modification also includes changes to the bases for [LCO 3.0.4 and SR 3.0.4] that provide details on how to implement the new requirements. The bases changes provide guidance for changing Modes or other specified conditions in the Applicability when an LCO is not met. The bases changes describe in detail how: [LCO 3.0.4.a] allows entry into a MODE or other specified condition in the Applicability with the LCO not met when the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time; [LCO 3.0.4.b] allows entry into a MODE or other specified condition in the Applicability with the LCO not met after performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate; and [LCO 3.0.4.c] allows entry into a MODE or other specified condition in the Applicability with the LCO not met based on a Note in the Specification, which is typically applied to Specifications which describe values and parameters (e.g., [Containment Air Temperature, Containment Pressure, MCPR, Moderator Temperature Coefficient]), though it may be applied to other Specifications based on NRC plant-specific approval. The bases also state that any risk impact should be managed through the program in place to implement 10 CFR 50.65(a)(4) and its implementation guidance, NRC Regulatory Guide 1.182, "Assessing and Managing Risks Before Maintenance Activities at Nuclear Power Plants," and that the results of the risk assessment shall be considered in determining the acceptability of entering the MODE or other specified condition in the Applicability, and any corresponding risk management actions. In addition, the bases state that upon entry into a Mode or other specified condition in the Applicability with the LCO not met, LCO 3.0.1 and LCO 3.0.2 require entry in to the applicable Conditions and Required Actions for no more than the duration of the applicable Completion Time or until the LCO is met or the unit is not within the Applicability of the TS. The bases also state that SR 3.0.4 does not restrict changing MODES or other specified conditions of the Applicability when a Surveillance has not been performed within the specified Frequency, provided the requirement to declare the LCO not met has been delayed in accordance with SR 3.0.3. Finally, the licensee is expected to have a bases control program consistent with Section 5.5 of the STS, and the equivalent of STS SR 3.0.1 and associated bases.

#### **4.0 ENVIRONMENTAL EVALUATION**

[LICENSEE] has reviewed the environmental evaluation included in the model safety evaluation dated [DATE] as part of the CLIIP. [LICENSEE] has concluded that the staff's findings presented in that evaluation are applicable to [PLANT] and the evaluation is hereby incorporated by reference for this application.

- 3 -

**ATTACHMENT 2**

**PROPOSED TECHNICAL SPECIFICATION CHANGES (MARK-UP)**

- 4 -

**ATTACHMENT 3**

**PROPOSED TECHNICAL SPECIFICATION PAGES**

**ATTACHMENT 4**

**LIST OF REGULATORY COMMITMENTS**

The following table identifies those actions committed to by [LICENSEE] in this document. Any other statements in this submittal are provided for information purposes and are not considered to be regulatory commitments. Please direct questions regarding these commitments to [CONTACT NAME].

<b>REGULATORY COMMITMENTS</b>	<b>DUE DATE/EVENT</b>
[LICENSEE] will establish the Technical Specification Bases for TS 3.0.3 as adopted with the applicable license amendment.	[Complete, implemented with amendment OR within X days of implementation of amendment]

- 6 -

**ATTACHMENT 5**

**PROPOSED CHANGES TO TECHNICAL SPECIFICATION BASES PAGES**

they would not necessarily or otherwise be violations of (a)(4) or other applicable regulations per se. However, it is envisioned that the significance of this particular type of TS violation, to the extent that the violation involves inadequate risk assessment and/or inadequate risk management, will be determined in a manner similar to that in which the significance of (a)(4) violations is determined. When issued, the specialized significance determination process (SDP) designed for (a)(4) violations would be used under such circumstances.

Dated at Rockville, Maryland, this 28<sup>th</sup> day of March 2003.

FOR THE NUCLEAR REGULATORY COMMISSION  
**/RA/**

William D. Beckner, Program Director  
Operating Reactor Improvements Program  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation

Attachments:

1. Model Safety Evaluation
2. Proposed No Significant Hazards Consideration Determination
3. Sample Model Application

**DISTRIBUTION: Hard Copy**

DLPM R/F

TSS R/F

ACRS

**E-mail**

S. Collins	B. Sheron	W. Borchardt	J. Zwolinski
W. Beckner	W. Reckley	R. Dennig	S. Brock
J. Moore	M. Johnson	F. Reinhart	N. Saltos
R. Barrett	T. Quay	W. Ruland	C. Carpenter
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OFFICE	LPD4/DLPM:NRR	OGC	SC:TSS:RORP	PD:RORP:DRIP:NRR
NAME	WHRuland*	SCole	RLDennig	WDBeckner
DATE	02/28/2003	03/25/2003	03/12/2003	03/28/2003

\*see prior concurrence

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